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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,026	11/24/2003	Toshikazu Kobayashi	AD6547USCNT	4782

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WILMINGTON, DE 19805

EXAMINER

SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/721,026

Applicant(s)

KOBAYASHI ET AL.

Examiner

Callie E. Shosho

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/582,483.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/26/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### **Specification**

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

In the present application, the abstract is two paragraphs not one as required.

### **Claim Objections**

2. Claim 1 is objected to because of the following informalities:

Claim 1 recites that the composition has surface resistivity of "10<sup>7</sup> to 10<sup>13</sup> Ω". Based on the disclosure on page 14, lines 20-21 of the present specification as well as present claim 8, it appears that this should read "10<sup>7</sup> to 10<sup>13</sup> Ω". Appropriate correction is required.

**Claim Rejections - 35 USC § 112**

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2, which depends on claim 1, and claim 16, which depends on claim 8, each recite the limitation "the ion-conductive polyether-based polymer" in line 2. There is insufficient antecedent basis for this limitation in the claim given that there is no disclosure in either claim 1 or claim 8 of "ion-conductive polyether-based polymer".

In light of the amendments to claims 1 and 8, it appears that claim 2 and claim 16 should each be cancelled.

**Claim Rejections - 35 USC § 102**

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-2, 5, 7-8, 10, 12, and 14-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Ueda et al. (U.S. 5,886,098).

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Ueda et al. disclose antistatic composition comprising 60-97% thermoplastic resin such as polyolefin, polyamide, polyester, or polycarbonate that corresponds to presently claimed polymer (A), 3-40% of the composition comprising at least 97% polyetherester amide that corresponds to presently claimed (B) and at least 0.01% halide of alkali metal, i.e. Li, Na, or K, or alkaline earth metal, i.e. Mg or Ca, that corresponds to presently claimed C(ii), 0.2-20% compatibilizer that is organic polymer possessing sulfo or carboxyl groups corresponding to presently claimed C(i), and plasticizer corresponding to presently claimed (D). The composition has surface resistivity on the order of  $10^{10}$  -  $10^{11}$ . There is also disclosed molded article obtained from the composition (col.1, lines 14-15, col.2, lines 25 and 35-42, col.4, lines 48-53, col.5, lines 7-19, col.6, lines 59-67, col.7, lines 31-53, col.8, lines 52-55, col.11, lines 22-32, col.12, line 19, col.15, lines 45-55, and Tables 7 and 10).

In light of the above, it is clear that Ueda et al. anticipate the present claims.

**Claim Rejections - 35 USC § 103**

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 3-4, 11, and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al. (U.S. 5,886,098) in view of Mukohyama et al. (U.S. 5,700,857).

The disclosure with respect to Ueda et al. in paragraph 6 above is incorporated here by reference.

The difference between Ueda et al. and the present claimed invention is the requirement in the claims of specific type and amount of plasticizer.

Mukohyama, which is drawn to resin composition, disclose the use of 0.1-10% plasticizer identical to that presently claimed, such as polyethylene glycol di-2-ethyl hexoate, in order to maintain the mechanical characteristics of the composition and control crystallization rate and molding temperature of the composition (col.3, lines 17-50). Attention is drawn to col.2, lines 19-23 of Mukohyama which discloses that the composition contains polyester containing

polyether, i.e. polyalkylene oxide, segments. It would have been obvious to one of ordinary skill in the art that such segment is intrinsically ion-conductive. Thus, it is clear that the plasticizer of Mukohyama is used in conjunction with polymers containing ion-conductive polyether segments and thus, the plasticizer of Mukohyama would intrinsically function as plasticizer for polyetherester amide.

In light of the motivation for using specific type and amount of plasticizer disclosed by Mukohyama as described above, it therefore would have been obvious to one of ordinary skill in the art to use such plasticizer in the antistatic composition of Ueda et al. in order to produce a composition with good mechanical properties and suitable crystallization rate and molding temperature, and thereby arrive at the claimed invention.

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al. (U.S. 5,886,098) in view of JP 01163252.

The disclosure with respect to Ueda et al. in paragraph 6 above is incorporated here by reference.

The difference between Ueda et al. and the present claimed invention is the requirement in the claims of specific type of molded article.

Ueda et al. disclose that the antistatic composition is used in molded articles but there is no explicit disclosure that the molded article is a transfer medium-separating guide part for electrophotographic devices.

On the one hand, given the broad disclosure of antistatic molded articles by Ueda et al., it would have been obvious to one of ordinary skill in the art to use such molded article in any

device which required antistatic properties including transfer medium-separating guide part for electrophotographic devices, and thereby arrive at the claimed invention.

On the other hand, JP 01163252 disclose that antistatic compositions comprising polymer such as polycarbonate and polyetherester amide are used in copiers and for parts of electric appliances and machines, which clearly encompasses transfer medium-separating guide part for electrophotographic devices.

In light of the disclosure of JP 01163252, it therefore would have been obvious to one of ordinary skill in the art that the antistatic composition of Ueda et al. can in fact function as transfer medium-separating guide part for electrophotographic devices, and thus, one of ordinary skill in the art would have arrived at the claimed invention.

11. Claims 1-5, 7-8, and 10-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al. (U.S. 5,886,098) in view of Mukohyama et al. (U.S. 5,700,857).

Ueda et al. disclose antistatic composition comprising 60-97% thermoplastic resin such as polyolefin, polyamide, polyester, or polycarbonate that corresponds to presently claimed polymer (A), 3-40% of the composition comprising at least 97% polyetherester amide that corresponds to presently claimed (B) and at least 0.01% halide of alkali metal, i.e. Li, Na, K, or alkaline earth metal, i.e. Mg or Ca, that corresponds to presently claimed C(ii), and plasticizer. The composition has surface resistivity on the order of  $10^{10}$  -  $10^{11}$ . There is also disclosed molded article obtained from the composition (col.1, lines 14-15, col.2, lines 25 and 35-42, col.4, lines 48-53, col.5, lines 7-19, col.6, lines 59-67, col.7, lines 31-53, col.8, lines 52-55, col.11, lines 22-32, col.12, line 19, col.15, lines 45-55, and Tables 7 and 10).



The difference between Ueda et al. and the present claimed invention is the requirement in the claims of (a) specific type and amount of plasticizer and (b) specific ion source.

With respect to difference (a), Ueda et al. disclose the use of plasticizer, however, there is no explicit disclosure that the plasticizer is for ion-conductive polyether polymer as presently claimed.

Mukohyama, which is drawn to resin composition, disclose the use of 0.1-10% plasticizer identical to that presently claimed, such as polyethylene glycol di-2-ethyl hexoate, in order to maintain the mechanical characteristics of the composition and control crystallization rate and molding temperature of the composition (col.3, lines 17-50). Attention is drawn to col.2, lines 19-23 of Mukohyama which discloses that the composition contains polyester containing polyether, i.e. polyalkylene oxide, segments. It would have been obvious to one of ordinary skill in the art that such segment is intrinsically ion-conductive. Thus, it is clear that the plasticizer of Mukohyama is used in conjunction with polymers containing ion-conductive polyether segments as required in the present claims.

In light of the motivation for using specific type and amount of plasticizer disclosed by Mukohyama as described above, it therefore would have been obvious to one of ordinary skill in the art to use such plasticizer in the antistatic composition of Ueda et al. in order to produce a composition with good mechanical properties and suitable crystallization rate and molding temperature, and thereby arrive at the claimed invention.

With respect to difference (b), Mukohyama, which is drawn to resin composition disclose the use of ion source comprising (i) at least one source of carboxyl groups selected from the group consisting hydrocarbon acid containing 7-54 carbon atoms and (ii) at least one source of

metal ions selected from sodium and potassium ion sources that react with the carboxyl groups of (i). The motivation for using such ion source is as crystallization promoter to increase the crystallization and produce composition with excellent impact strength and high surface gloss (col.2, lines 4-16, col.3, line 65-col.4, line 31, col.5, lines 30-32, and col.7, lines 6-12).

In light of the motivation for using specific ion source disclosed by Mukohyama as described above, it therefore would have been obvious to one of ordinary skill in the art to use such ion source in the antistatic composition of Ueda et al. in order to produce a composition with excellent impact strength and high surface gloss, and thereby arrive at the claimed invention.

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al. in view of Mukohyama as applied to claims 1-5, 7-8, and 10-18 above, and further in view of JP 01163252.

The difference between Ueda et al. in view of Mukohyama and the present claimed invention is the requirement in the claim of specific type of molded article.

Ueda et al. disclose that the antistatic composition is used in molded articles but there is no explicit disclosure that the molded article is a transfer medium-separating guide part for electrophotographic devices.

On the one hand, given the broad disclosure of antistatic molded articles by Ueda et al., it would have been obvious to one of ordinary skill in the art to use such molded article in any device which required antistatic properties including transfer medium-separating guide part for electrophotographic devices, and thereby arrive at the claimed invention.

On the other hand, JP 01163252 disclose that antistatic compositions comprising polymer such as polycarbonate and polyetherester amide are used in copiers and for parts of electric appliances and machines, which clearly encompasses transfer medium-separating guide part for electrophotographic devices.

In light of the disclosure of JP 01163252, it therefore would have been obvious to one of ordinary skill in the art that the antistatic composition of Ueda et al. can in fact function as transfer medium-separating guide part for electrophotographic devices, and thus, one of ordinary skill in the art would have arrived at the claimed invention.

13. Claims 1-3, 5, 8, 10, 11-12, and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamanaka et al. (U.S. 2003/0077432) in view of Mukohyama et al. (U.S. 5,700,857).

Yamanaka et al. disclose antistatic resin composition comprising 5-40% polyetherester amide corresponding to presently claimed (B), 3-20% polyamide corresponding to presently claimed (A), 0.01-20% metal salt such as lithium chloride, potassium chloride, magnesium chloride, sodium bromide, etc. corresponding to presently claimed C(ii), 1-20% acid modified polypropylene corresponding to presently claimed C(i), and 55-90% polypropylene corresponding to presently claimed (A). The composition possesses surface resistivity of  $9 \times 10^{10}$  -  $3 \times 10^{12}$ . There is also disclosed molded articles obtained from the composition (paragraphs 1, 15, 20, 25-26, 49, 55-57, 81, and 86). It is clear that the acid modified polypropylene would intrinsically be neutralized with the Na, K, etc. ions from the metal salt.

The difference between Yamanaka et al. and the present claimed invention is the requirement in the claims of plasticizer.

Mukohyama, which is drawn to resin composition, disclose the use of 0.1-10% plasticizer identical to that presently claimed, such as polyethylene glycol di-2-ethyl hexoate, in order to maintain the mechanical characteristics of the composition and control crystallization rate and molding temperature of the composition (col.3, lines 17-50). Attention is drawn to col.2, lines 19-23 of Mukohyama which discloses that the composition contains polyester containing polyether, i.e. polyalkylene oxide, segments. It would have been obvious to one of ordinary skill in the art that such segment is intrinsically ion-conductive. Thus, it is clear that the plasticizer of Mukohyama is used in conjunction with polymers containing ion-conductive polyether segments as required in the present claims and thus, the plasticizer of Mukohyama et al. would intrinsically function as plasticizer for polyetherester amide.

In light of the motivation for using specific type and amount of plasticizer disclosed by Mukohyama as described above, it therefore would have been obvious to one of ordinary skill in the art to use such plasticizer in the antistatic composition of Yamanaka et al. in order to produce a composition with good mechanical properties and suitable crystallization rate and molding temperature, and thereby arrive at the claimed invention.

14. **NOTE:** Applicants filed 1.132 declaration on 11/14/03. The declaration shows that the composition of example 1 of Mukohyama et al. possesses surface resistivity outside the scope of the present claims.

However, although the surface resistivity of the composition of Mukohyama et al. as determined by applicants, i.e.  $4.3 \times 10^{13} \Omega$ , is outside the scope of presently claimed surface resistivity, there is no evidence that this means that the composition is non-conductive, only that the composition has conductivity different than that presently claimed.

Further, it is also noted that even if the surface resistivity of the composition of Mukohyama is outside the scope of the surface resistivity presently claimed, Mukohyama is not used for its teaching of surface resistivity. The surface resistivity is already disclosed by the primary reference Ueda et al. or Yamanaka et al. while Mukohyama is used for its teaching of plasticizer which Mukohyama disclose is necessary to realize the crystallization rate and molding temperature needed for realizing the synergistic effect with such polyether segment (col.3, lines 40-46).

Thus, it is the examiner's position that Mukohyama remains a relevant reference against the present claims.

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

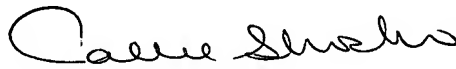
Zhang et al. (U.S. 6,355,716) disclose composition possessing polyester, polyetherester amide, alkaline metal, and modified polyolefin, however, there is no disclosure of plasticizer as presently claimed.

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16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Callie E. Shosho  
Primary Examiner  
Art Unit 1714

CS  
3/7/05